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A Prospective Study on Assessment of Etiological Profile, and Clinical Characteristics for Therapeutic Management of Chronic Liver Disease Patients in a Tertiary Care Hospital

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ABSTRACT

Background: Chronic liver disease is a major global health threat and has emerged as a leading cause of human death. There are several causes behind the development of Chronic liver disease, but some of the most common include alcohol abuse, obesity/metabolic disease, autoimmune hepatitis, and viral hepatitis. **Aim:** The study aimed to a**ssess** etiological profile, and clinical characteristics for therapeutic management of chronic liver disease patients in a tertiary care hospital. **Methods:** It was Prospective observational study. The Present study was conducted for a period of six months. The Present study was conducted in General medicine department in a tertiary care hospital. The sample size was 55 Patients. **Results:** In our study 36-45 years age patients were more 22(44%) compared to other ages. In our study Alcoholic Liver Disease etiology patients were more 17 (34%) as compared to other etiological factors. Complications of chronic liver disease includes Spontaneous Bacterial Peritonitis patients were more 18(36%) compared to other complications. Clinical manifestations of chronic liver disease include Abdominal distension patients were more 14 (28%) compared to other symptoms. Lab test for chronic liver disease include AST (U/L) patients were more 10 (20%) compared to other lab test. Drug prescribing pattern for chronic liver disease includes Rifaximin 16 patients were more compared to other drugs. **Conclusion:** Strengthening preventive strategies, including lifestyle modifications, early screening for viral hepatitis, and optimized management protocols which is important to reduce the morbidity and mortality in chronic liver disease patients.

Keywords
Chronic liver disease
Abdominal distension
Bacterial Peritonitis
Viral hepatitis

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Introduction

Chronic liver disease (CLD) is a major global health threat and has emerged as a leading cause of human death. There are several causes behind the development of CLDs, but some of the most common include alcohol abuse, obesity/metabolic disease, autoimmune hepatitis, and viral hepatitis. Liver disease stands as a leading cause of global mortality. The Global Burden of Disease 2019 study reported that 1.26 million individuals succumbed to cirrhosis and other chronic liver diseases in 2019, marking a 13% increase since 1990. Liver cancer, a terminal outcome of liver disease, accounted for approximately 830,000 deaths in 2020, representing 8.3% of global cancer-related deaths[1-3]. Viral hepatitis, especially HBV and HCV, annually leads to around 1.3 million deaths. Liver disease incidence is on the rise worldwide, posing an increasing risk of morbidity. Despite intensified global public health interventions, liver diseases continue to represent a significant portion of the global disease burden, underscoring the complexity and multidimensionality of liver disease epidemiology. The shift towards lifestyle-associated liver diseases, such as MASLD and ALD, is particularly alarming. This trend is closely linked to changes in global dietary habits, sedentary behavior, and rising obesity rates[4-6].

Etiology

Alcoholic Liver Disease

Alcoholic liver disease is a spectrum of disease which includes alcoholic fatty liver with or without hepatitis, alcohol hepatitis (reversible because of acute ingestion) to cirrhosis (irreversible).

Non-alcoholic Fatty Liver Disease

NAFLD has an association with metabolic syndrome (obesity, hyperlipidemia, and diabetes mellitus). Some of these patients develop non-alcoholic steatohepatitis, which leads to fibrosis of the liver.

Chronic Viral Hepatitis

Chronic hepatitis B, C, and D infections are the most common causes of chronic liver disease in East Asia and Sub-Saharan Africa. There are various genotypes of hepatitis C. In Europe

and North America, genotype 1a and 1b are more prevalent, while in Southeast Asia, genotype 3 is more common.

Genetic Causes

Alpha-1 antitrypsin deficiency: This is the most common genetic cause of CLD among children.

Hereditary hemochromatosis: It is an autosomal recessive disorder of iron absorption. Here due to a mutation involving the HFE gene that regulates the iron absorption from the intestine, excessive iron is absorbed from the gastrointestinal tract.

Wilson disease: Autosomal recessive disorder leading to copper accumulation.

Autoimmune Causes

Autoimmune hepatitis is a rare disease in which there is the destruction of liver parenchyma by autoantibodies. Most of the patients who present with this disease have already developed cirrhosis. Females are more commonly affected than males.

Primary biliary cirrhosis (PBC): This is an autoimmune and progressive disease of the liver, which is the destruction of intrahepatic biliary channels and portal inflammation and scarring. It leads to cholestatic jaundice and fibrosis of liver parenchyma[7-8].

Primary Sclerosing Cholangitis (PSC):

Commonly associated with ulcerative colitis. This condition is characterized by a decrease in the size of intrahepatic and extrahepatic bile ducts due to inflammation and fibrosis.

Autoimmune hepatitis (AIH):

This is a form of chronic inflammatory hepatitis, more common in women than men, and is characterized by elevated autoantibodies such as antinuclear antibodies, anti-smooth muscle antibodies, hypergammaglobulinemia.

Pathophysiology

Chronic liver disease represents a continuous and progressive process of hepatic fibrosis, liver tissue architectural distortion, and regeneration nodule formation. While fibrosis is usually irreversible, but it can be reversible in the initial stage of development. The development rate of fibrosis is dependent on the underlying etiologies, environmental, and host factors. Hepatic fibrosis is the deposition of extracellular matrix (ECM) in response to chronic liver injury by any etiology. This pro-inflammatory phase or initiation phase also changes gene and phenotypic expression of the liver cells, making them more responsive to these inflammatory cytokines, and perpetuation of activated HSC cells results in the accumulation of ECM and progressive fibrosis[9-10].

Clinical Manifestations

- Fluid buildup in the belly (ascites)
- Vomiting blood, often from bleeding in the blood vessels in the food pipe (esophagus)
- Gallstones
- Itching
- Yellowing of the skin and eyes (jaundice)
- Kidney failure
- Muscle loss
- Loss of appetite
- Easy bruising
- Spider-like veins in the skin
- Low energy and weakness (fatigue)
- Weight loss
- Confusion as toxins build up in the blood

Radiologic Investigations

It includes an abdominal ultrasound, CT scan, fibro scan, hepatic wedge pressure, endoscopy, EEG, TIPS, triphasic CT, and Doppler scan.

Treatment

The treatment goal is to stop the progression of the disease and complications and require a multidisciplinary approach. The principle of management is mainly underlying cause correction, Portal hypertension management, and specific treatments for individual disease[11-12].

Prevention Strategies

Limit Alcohol: Reduce or eliminate alcohol intake, as it's a major cause of liver damage.

Healthy Diet: Focus on fruits, veggies, whole grains; limit saturated fats, sugar, and processed foods (Mediterranean diet is great).

Maintain Healthy Weight: Obesity leads to nonalcoholic fatty liver disease (NAFLD).

Exercise Regularly: Improves liver function and reduces disease risk.

Vaccinations: Get vaccinated for Hepatitis A and B.

Medication Safety: Use over-the-counter pain relievers (like acetaminophen) sparingly and follow dosing strictly; review all meds with your doctor.

Avoid Toxins: Be careful with chemicals; wear protective gear.

Manage Metabolic Health: Control blood sugar, cholesterol, and blood pressure.

Patient Education Focus

Know Your Risk: Understand if you have risk factors like obesity, diabetes, or hepatitis.

Early Detection: Get regular checkups and screenings, as liver disease often has no symptoms until advanced.

Hygiene: Practice good hand washing and safe food handling to prevent viral spread.

Medication Adherence: Understand why new meds are prescribed and potential side effects.

Dietary Awareness: Learn what foods help and harm your specific condition (e.g., copper restriction for Wilson's Disease).

Proactive Communication: Write down questions for doctors, bring a companion, and take notes during appointments.

Lifestyle Integration: Realize that slowing or reversing disease progression often relies on lifestyle changes[13-14].

2. Materials and Methods

Study Design: It was Prospective observational study.

Study Period: The Present study was conducted for a period of six months.

Study site: The Present study was conducted in General medicine department in a tertiary care hospital.

Sample size: It was 55 Patients.

Inclusion criteria

- Patients with age of more than 18 years.
- Recently diagnosed with chronic liver disease.
- Patients receiving treatment for chronic liver disease.
- Patients who are willing to give consent.

Exclusion criteria

- Patients below 18 years.
- Patients who were not willing to join in the study.
- Psychiatric abnormalities.

Institutional ethics committee (IEC) consideration:
The research protocol was submitted to ethical committee and ethical Committee was permitted to perform the research work in the selected department of a tertiary care hospital.

Patient data collection and management:
The data collection form contains information regarding age, sex, diagnosis, past medical history, medication history, laboratory data, and diagnosis, dose and frequency of administration and duration of therapy was collected from the patients treatment chart.

Statistical analysis: The collected data was represented as percentages.

Results and Discussion

Table 1: Age wise distribution

S.No	Age	Total (N=50)	Percentage (%)
1	20-25	7	14
2	26-35	9	18
3	36-45	22	44
4	46-55	12	24
	Total	**50**	

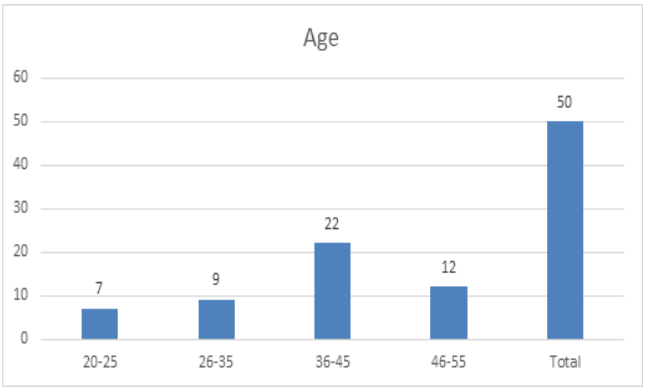

Figure 1: Age wise distribution

Table 2: Gender

Gender	Total (N=50)	Percentage (%)
Male	33	66
Female	17	34
Total	**50**	

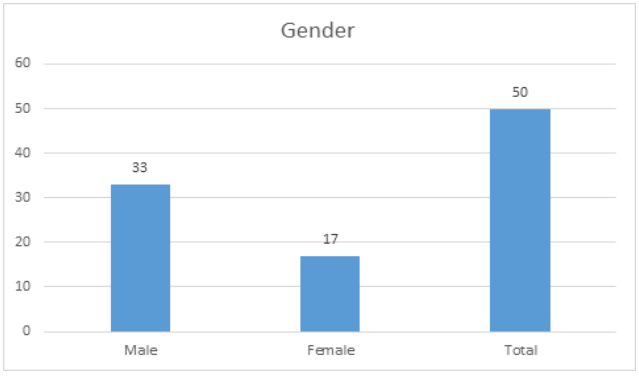

Figure 2: Gender

Table 3: Type of Patients

Type of Patients	Total (N=50)	Percentage (%)
In Patients	36	72
Out Patients	14	28
Total	**50**	

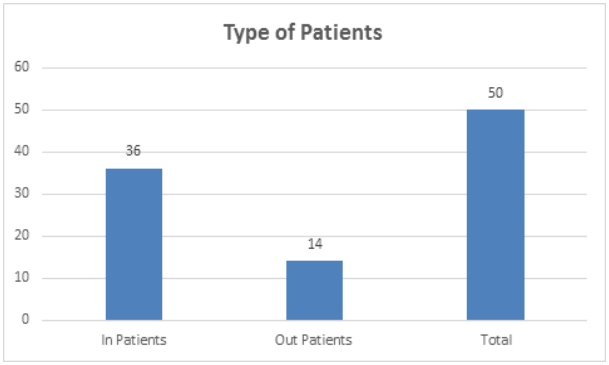

Figure 3: Type of Patients

Table 4: Hepatic encephaolopathy grades

Hepatic encephaolopathy grades	Total (N=50)	Percentage (%)
Grade I	14	28
Grade II	22	44
Grade III	9	18
Grade IV	5	10
Total	**50**	

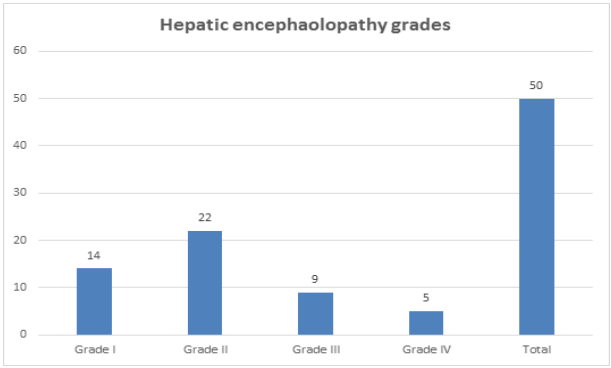

Figure 4: Hepatic encephaolopathy grades

Table 5: BMI

BMI	Total (N=50)	Percentage (%)
Underweight	8	16
Normal weight	6	12
Obesity grade I	9	18
Obesity grade II	27	54
Total	**50**	

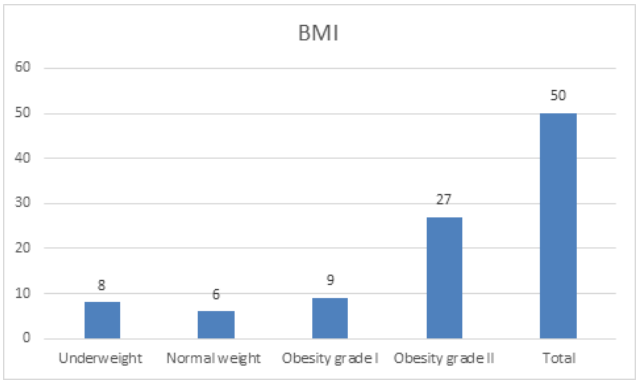

Figure 5: BMI

Table 6: Length of Hospital stay

Length of Hospital stay	Total (N=50)	Percentage (%)
1-6 days	25	50
7-15 days	17	34
16-22 days	8	16
Total	**50**	

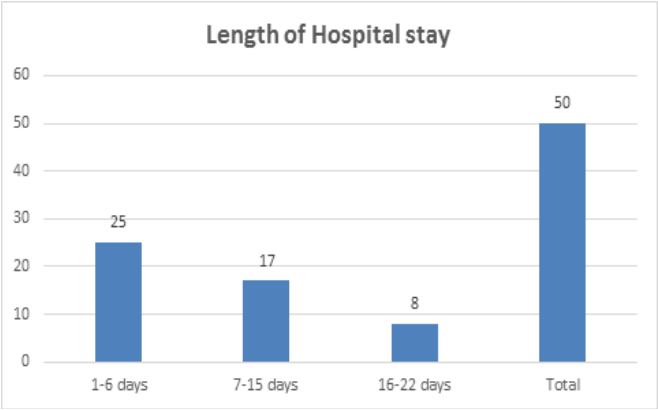

Figure 6: Length of Hospital stay

Table 7: Etiology of chronic liver disease

Etiology	Total (N=50)	Percentage (%)
Autoimmune Hepatitis	11	22
Primary Biliary Cholangitis	8	16
Hemochromatosis	14	28
Alcoholic Liver Disease	17	34
Total	**50**	

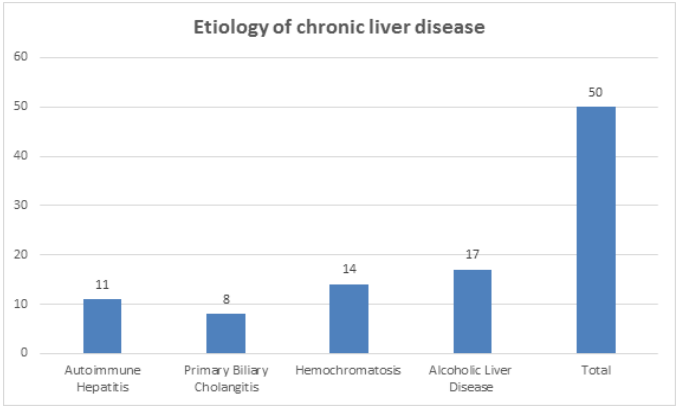

Figure 7: Etiology of chronic liver disease

Table 8: Complications of chronic liver disease

Complications	Total (N=50)	Percentage (%)
Ascites	5	10
Hepatic Encephalopathy	8	16
Variceal Bleeding	9	18
Hepatopulmonary Syndrome	10	20
Spontaneous Bacterial Peritonitis	18	36
Total	**50**	

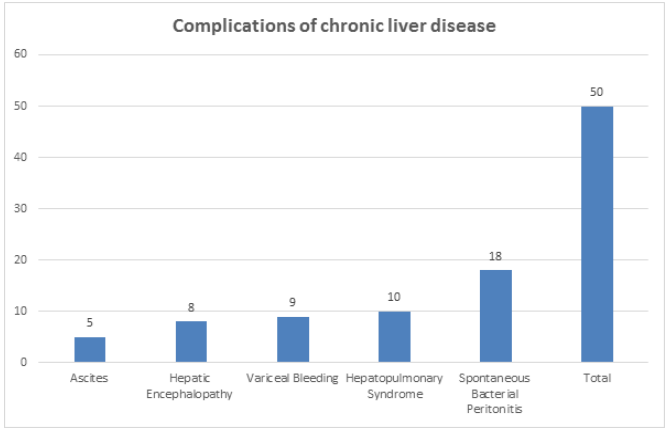

Figure 8: Complications of chronic liver disease

Table 9: Clinical manifestations of chronic liver disease

Clinical manifestations	Total (N=50)	Percentage (%)
Pain abdomen	8	16
Pedal oedema	7	14
Jaundice	9	18
Abdominal distension	14	28
Blood vomiting	12	24
Total	**50**	

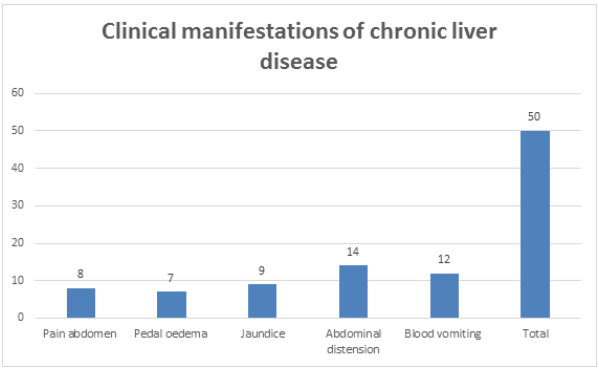

Figure 9: Clinical manifestations of chronic liver disease

Table 10: Lab test for chronic liver disease

Lab test	Total (N=50)	Percentage (%)
Total Bilirubin (mg/dL)	4	8
Direct Bilirubin (mg/dL)	6	12
AST (U/L)	10	20
ALT (U/L)	9	18
Alkaline Phosphatase (U/L)	5	10
GGT (U/L)	9	18
Serum Albumin (g/dL)	7	14
Total	**50**	

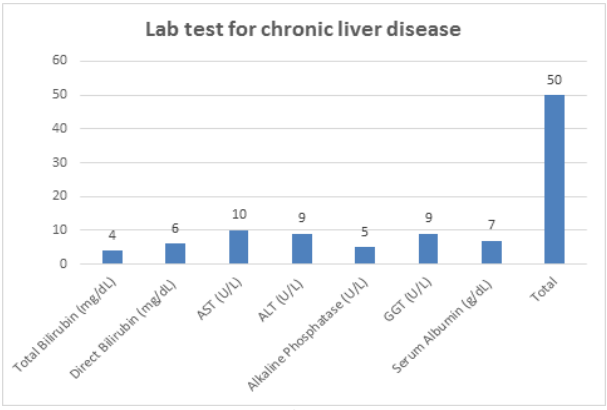

Figure 10: Lab test for chronic liver disease

Table 11: Drug prescribing pattern for chronic liver disease

Prescribed drugs	Total (N=50)	Percentage (%)
Prednisolone	5	10
Propranolol	6	12
Lactulose	7	14
Spiranolactone	4	8
Cefotaxime	12	24
Rifaximin	16	32
Total	**50**	

Table 12: WHO Drug prescribing indicators

WHO Prescribing indicators	
Total number of patient's prescription analyzed	50
Total number of drugs prescribed	50*8=400
Average number of drugs per prescription	8.0
Number of drugs prescribed by Generic name	115
Number of drugs prescribed by Brand name	285
Drugs included in National list of essential medicines	85

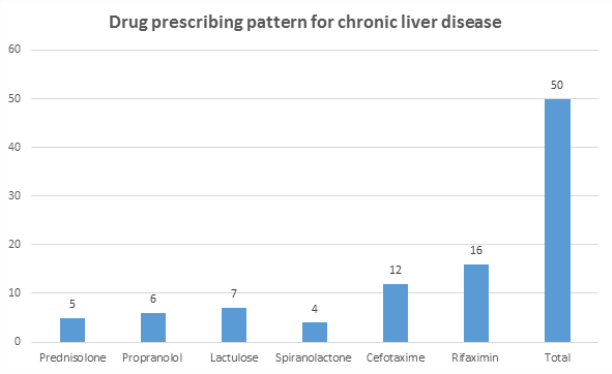

Figure 11: Drug prescribing pattern for chronic liver disease

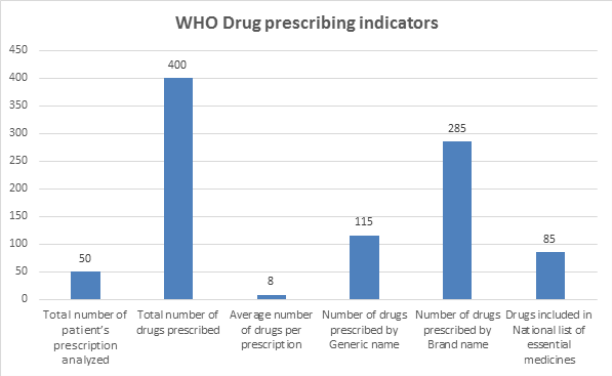

Figure 12: WHO Drug prescribing indicators

Discussion

- In our study 36-45 years age patients were more 22(44%) compared to other ages.
- In our study male patients were more 33(66%), compared to female patients were 17(34 %).
- In our study In Patients were more 36 (72%) compared to Out Patients were 14 (28%).
- In our study Hepatic encephaolopathy grades includes Grade II Patients were more 22(44%) compared to other grades.
- In our study Obesity grade II Patients were more 27 (54%) compared to other BMI categories.
- In our study 7-15 days duration treatment received patients were more 17 (34%) compared to other duration.
- In our study Alcoholic Liver Disease etiology patients were more 17 (34%) as compared to other etiological factors.
- Complications of chronic liver disease includes Spontaneous Bacterial Peritonitis patients were more 18 (36%) compared to other complications.[15]
- Clinical manifestations of chronic liver disease includes Abdominal distension patients were more 14 (28%) compared to other symptoms.
- Lab test for chronic liver disease include AST (U/L) patients were more 10 (20%) compared to other lab test.
- Drug prescribing pattern for chronic liver disease includes Rifaximin 16 patients were more compared to other drugs[16].
- WHO Drug prescribing indicators includes WHO Drug prescribing indicators includes Total number of patient's prescription analyzed were 50, Total number of drugs prescribed were 400, Average number of drugs per prescription were 8.0, Number of drugs prescribed by Generic name was 115, Number of drugs prescribed by Brand name was 285, Drugs included in National list of essential medicines was 85.

Conclusion

Chronic liver disease is a serious condition that often leads to high mortality and causes damage to the liver which has underlying chronic liver disease besides causing multi organ failure. Current treatment strategies are symptomatic therefore better characterization of the liver disease will assist in developing new management strategies in future[110-114]. Our study demonstrates the burden of chronic liver disease, emphasizing its progressive complications and severe biochemical alterations[17]. High prevalence of ascites, portal hypertension, and hepatic encephalopathy underscores the advanced stage at which was most important and timely diagnosis is required[115-116]. Strengthening preventive strategies, including lifestyle modifications, early screening for viral hepatitis, and optimized management protocols which is important to reduce the morbidity and mortality in chronic liver disease patients.

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Conflict of Interests

The authors declare no conflict of interest

Ethics Approval: Not applicable

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AI Tool Declaration

The authors declare that no AI and related tools are used to write the scientific content of this manuscript.

Data Availability

Data will be available on request

References

[1] Chalasani N, Younossi Z, Lavine JE, Charlton M, Cusi K, Rinella M, et al. The diagnosis and management of nonalcoholic fatty liver disease: practice guidance from the American Association for the Study of Liver Diseases. Hepatology. 2018;67(1):328–57.

[2] Shrestha AK, Shrestha A, Shah S, Bhandari A. Clinicodemographic profile of chronic liver disease

patients at a tertiary care hospital: a retrospective analysis. Ann Med Surg. 2023;85(3):399–402.

[3] Ou P, Chen Y, Li B, Zhang M, Liu X, Li F. Causes, clinical features and outcomes of drug-induced liver injury in hospitalized patients in a Chinese tertiary care hospital. Springerplus. 2015; 4:1–8.

[4] Agbozo WK, Dzudzor B, Nyarko EN, Lartey-Abrahams K, Mensah RN, Tachi K. Sociodemographic and medical characteristics of liver cirrhosis deaths in a Ghana-I an tertiary hospital. Ghana Med J. 2022;56(4):259–67.

[5] Shafiq S, Khan MN, Majumder B, Alam MS, Islam MS, Sultana T: Correlation of albumin-bilirubin (ALBI) score with Child-Turcotte-Pugh (CTP) score in the evaluation of liver cirrhosis. Am J Lab Med. 2019, 4:60-4.

[6] Sreenivas PS, Sandhyarani L, Naidu RJ, Bhargavi KS, Raja AS: CRP levels in chronic liver disease and CRP+Child Pugh score in liver disease patients. IOSR J Dent Med Sci. 2021, 20:52-8.

[7] EASL Clinical Practice Guidelines on hepatitis delta virus . European association for the study of the liver. J Hepatol. 2023;79(2):433–460.

[8] Abraldes JG, Caraceni P, Ghabril M, et al. Update in the Treatment of the Complications of Cirrhosis. Clin Gastroenterol Hepatol. 2023; 21(8):2100–2109.

[9] Younossi ZM, Koenig AB, Abdelatif D, et al. Global epidemiology of nonalcoholic fatty liver disease: meta-analytic assessment of prevalence, incidence, and outcomes. Hepatology 2016;64:73-84.

[10] Ekstedt M, Franzén LE, Mathiesen UL, et al. Long-term follow-up of patients with NAFLD and elevated liver enzymes. Hepatology 2006;44:865-873.

[11] Perumpail BJ, Khan MA, Yoo ER, et al. Clinical epidemiology and disease burden of nonalcoholic fatty liver disease. World J Gastroenterol 2017;23:8263-8276.